

Proposal for Modification to Authorization of Ecorse Creek Flood Control

The Ecorse Creek project located in Wayne County, Michigan, which was originally authorized in Water Resources Development Act (WRDA) of 1990, Title I, Section 101(a)(14) (PL 101-640) and continued in WRDA 2007, was to help correct the flooding of Ecorse Creek. Development and growth within the drainage district has caused the original authorization to be inadequate and modification to the authorization is necessary.

The North Branch of the Ecorse Creek (NBEC) has a long history of flooding, which is expected to be a recurring problem unless corrective measures are implemented. There have been several Major Disaster and Presidential Declarations with the most recent being in September 2014. In the long run, mitigation of the flooding problem would significantly reduce recurrent property loss, environmental damage, and Federal disaster assistance expenditures. A General Reevaluation Report (GRR) has been prepared in partnership between the County of Wayne and the U.S. Army Corps of Engineers (USACE), Detroit District under a Feasibility Cost Share Agreement (FCSA) that was signed on October 30, 2009.

Wayne County conducted its own study during 2005 to 2008 and shared that study with the USACE when Wayne County and the USACE embarked on the GRR in 2009. In December of 2011 the Draft GRR was issued and the Agency Technical Review (ATR) process began shortly thereafter and is almost complete. The USACE Detroit District is working on finishing the ATR and conducting the required Independent External Peer Review (IEPR).

The Recommended Alternative consists of a single optimized detention basin located just northeast of Powers Avenue and Inkster Road, with greenway channel improvements of varying widths. There is the need to locate the basin in this immediate area because of the hydraulic effectiveness of doing so, while causing the least disruption to existing residences and businesses. This basin would be located adjacent to the confluence of the NBEC and Butler Drain, a key tributary of NBEC drainage system.

The channel improvements entail constructing a 35-foot wide greenway channel from Madison Street to westbound I-94 and a 15-foot wide greenway channel from westbound Interstate-94 to Allen Road. Downstream of Allen Road to the Detroit River, the channel improvements vary in width. As part of the channel improvements, five bridges will be replaced and one bridge will be removed to accommodate improved conveyance. Stormwater management planning and flood warning systems are two non-structural flood management measures that the non-Federal sponsor would implement as part of the Recommended Alternative.

The Recommended Alternative affirms that a single optimized detention basin and associated conveyance improvements can effectively manage and reduce flood risks and associated damages, hazards and inconveniences associated with repetitive flooding experienced for the affected communities. The Recommended Alternative meets the planning criteria of being technically effective, environmentally sound, socially and politically acceptable, cost effective, and engineeringly feasible.

1. Non-Federal Sponsor: County of Wayne, Michigan, acting through the North Branch Ecorse Creek Drain Drainage District.
2. Proposal: Modification to current authorization of a water resource development project.
3. Purpose: Update project to current conditions and costs because of significant demographic changes and development within the drainage district, and increased flooding events.
4. Project Cost Estimate: The estimated cost to implement the Recommended Alternative (Locally Preferred Plan) is \$106,826,000 (2010 \$s). The estimated cost, with a 50/50 (maximum) implementation cost share, is \$53,413,000 each, for the Federal (USACE) and non-Federal (Wayne County).
5. Benefits: The National Economic Development (NED) Benefits of the recommended Alternative based on Project Annual Equivalent Costs are summarized below (2010 \$s, Discount Factor 4.125% and 50 year project life);
 - Annual Project Cost - \$4,040,000
 - Flood Damage Reduction(FDR) Benefit - \$12,504,000
 - Benefit to Cost Ratio (BCR) FDR – 3.10
 - Net Benefits FDR - \$8,464,000
 - Vehicle User Cost Reductions - \$191,900
 - Reductions in Wastewater Treatment Costs - \$164,300
 - Total Project NED Benefit - \$12,812,000
 - NED BCR – 3.18

- NED Total Net Benefits - \$8,802,000

Implementation of the Recommended Alternative would provide Regional Economic Development benefits through direct and indirect economic activity, employment, and income increases through construction and maintenance activities. The results from the analysis of construction activities and O&M impacts are shown below (2010 \$s);

	Total Impact from Construction Activities	Total Annual Impact from O&M
Wayne County		
Economic Output	\$260,108,000	\$169,000
Income	\$101,082,000	\$66,000
Employment	2,008	1
State of Michigan		
Economic Output	\$411,158,000	\$268,000
Income	\$142,359,000	\$93,000
Employment	2,862	2

The Recommended Alternative would have benefits to area roads and freeways, as area roads would experience minimal or no flooding during the 100-year event. Positive effects of include improvements to public health and safety in the NBEC area through the reduction of flooding.

The Recommended Alternative will have a positive effect on groundwater resources by allowing detained flood water to infiltrate into the ground. Additionally, it will greatly improve the character of the surface water of NBEC by providing flood detention, improving water quality, and supporting more stable hydrology within the NBEC. The Recommended Alternative will have a positive effect on fish resources and associated habitat through improved water quality and a more stable hydrologic character. The Recommended Alternative will also benefit wildlife by replacing altered/disturbed land with the creation of emergent wetland habitat within the riparian areas of the improved channel. This type of habitat will benefit aquatic-reliant organisms including birds, amphibians, and reptiles.

6. Local Project Support: There is local support from all of the affected communities (Allen Park, Dearborn Heights, Ecorse, Inkster, Lincoln Park, Melvindale, Romulus, Taylor, Westland) and they have participated in many stakeholder meetings throughout the development of the GRR. Prior to the initiation of the GRR process, the Wayne County 2008 Greenway Alternative represented the non-Federal sponsor's approach to address Flood Risk Management. In proceeding with the Corps' GRR afterward, Wayne County aligned with the Corps' planning process and the NED approach to plan selection. The Greenway Alternative was developed as part of the 2008 Wayne County study to address specific flood

risk management goals, priorities and objectives identified by the local entities in the watershed. The Wayne County 2008 Greenway Alternative was heavily supported by communities in the NBEC watershed. Wayne County has worked in close partnership with the Corps to ensure that the study and the GRR fairly and accurately reflect its views. This partnership has led to an ongoing collaboration and support toward the development of the Recommended Alternative, which was adopted by Wayne County as the Locally Preferred Plan.

7. Financial Ability: The North Branch Ecorse Creek Drain Drainage District has the ability to fund Flood Risk Management projects under the Michigan Drain Code.
8. Support Documentation: See attached.